State of New Hampshire
Bureau of Purchase and Property
25 Capitol Street, State House Annex
Concord, New Hampshire 03301-6398

Date: 6/11/2004

Bid No.: 460

Date of Bid Opening: 6/22/2004

Time of Bid Opening: 2:30

PLEASE DIRECT ANY QUESTIONS REGARDING THIS BID TO: ALAN HOFMANN, PURCHASING AGENT/kc TEL. NO: (603) 271-2550 - FAX No. (603) 271-2700

# BID INVITATION FOR: THERMOPLASTIC ROAD MARKING APPLICATOR

Unless specifically amended or deleted by the Division of Plant and Property Management, the following General Terms and Conditions apply to this Bid and any resulting Purchase Order or Contract.

#### **GENERAL CONDITIONS AND INSTRUCTIONS:**

**NATURE OF, AND ELIGIBILITY TO RESPOND.** This bid invitation is submitted in accordance with Chapter 21-1, and rules promulgated thereunder, and constitutes a firm and binding offer. A bid may not be withdrawn unless permission is obtained from the Bureau of Purchase and Property.

Bids may be issued only by the Bureau of Purchase and Property and are not transferable.

**SAMPLES AND DEMONSTRATIONS.** When samples are required they must be submitted free of costs and will not be returned.

Items left for demonstration or evaluation purposes shall be delivered and installed free of charge and shall be removed at no cost to the State. Demonstration units shall not be offered to the State as new equipment.

**Bids.** Bids must be received at the Bureau of Purchase and Property before the date and time specified for the opening. Bids must be submitted on this bid form or exact copies and must be typed or clearly printed in ink. Corrections must be initialed. Bids are to be made less Federal Excise Tax and no charge for handling unless required by law.

Bids will be made available to the public after the time of award. Bid results will be given by mail only if requested in writing and accompanied by a self-addressed, stamped business size envelope.

**SPECIFICATIONS.** Vendors must submit on items as specified. Proposed changes must be submitted in writing and received at the Bureau of Purchase and Property at least five (5) working days prior to the bid opening. Vendors shall be notified in writing if any changes to the specifications are made.

**AWARD.** The award will be made to the responsible Vendor submitting a conforming RFB meeting specifications at the lowest cost unless other criteria are noted in the RFB. Unless otherwise noted, the award may be made by individual items.

If there is a discrepancy between the unit price and the extension, the unit price will prevail.

When identical low bids are received the award will be made in accordance with the Administrative Rules.

Discounts will not be considered in making award but may be offered on the Invoice for earlier payment and will be applicable on the date of completion of delivery or receipt of Invoice, whichever is later. On orders specifying split deliveries, discounts will apply on the basis of each delivery or receipt of Invoice, whichever is later.

**PATENT INFRINGEMENT.** Any responding vendor who has reason to believe that any other responding vendor will violate a patent should such responding vendor be awarded the contract shall set forth in writing, prior to the date and time of opening, the grounds for his belief and a detailed description of the patent.

**ASSIGNMENT PROVISION.** The responding vendor hereby agrees to assign all causes of action that it may acquire under the antitrust laws of New Hampshire and the United States as the result of conspiracies, combinations, or contracts in restraint of trade which materially affect the price of goods or services obtained by the state under this contract if so requested by the State of New Hampshire.

**FEDERAL FUNDS.** This Division of Plant and Property Management, under RSA 21-1:14, VIII shall assure the continuation or granting of federal funds or other assistance not otherwise provided for by law by following the Federal Procurement Standards.

**STATE'S OPTIONS:** The Bureau of Purchase and Property reserves the right to reject or accept all or any part of any bid, to determine what constitutes a conforming bid, to award the bid solely as it deems to be in the best interest of the State, and to waive irregularities that it considers not material to the bid.

**PUBLIC INFORMATION:** The responding vendor hereby acknowledges that all information relating to this bid and any resulting order (Including but not limited to fees, contracts, agreements and prices) are subject to these laws of the State of New Hampshire regarding public information.

**PERSONAL LIABILITY:** The responding vendor agrees that in the preparation of this bid or the execution of any resulting contract or order, representatives of the State of New Hampshire shall incur no liability of any kind.

**PROOF OF COMPLIANCE.** The responding vendor may be required to supply proof of compliance with proposal specifications. When requested, the responding vendor must immediately supply the Bureau of Purchase and Property with certified test results or certificates of compliance. Where none are available, the State may require independent laboratory testing. All costs for such testing, certified test results or certificate of compliance shall be the responsibility of the responding vendor.

**FORM OF CONTRACT.** The terms and conditions set forth in any additional Terms and Conditions by the Bureau of Purchase and Property are part of the bid and will apply to any contract awarded the responding vendor unless specific exceptions are taken and accepted and will prevail over any contrary provisions in Terms and Conditions submitted by the responding vendor.

**OFFER.** The undersigned hereby offers to sell to the State of New Hampshire the commodities or services indicated in the following page(s) of this Bid at the price(s) quoted in complete accordance with all conditions of this Bid.

Company Name:		
Address:		
Tel.#:(local)	(Toll free)	
Authorized	(EMAIL)	
	TYPE OF PRINT NAME	

#### (TYPE OR PRINT NAME)

This document must be signed by a person who is authorized to legally obligate the responding vendor. A signature on this document indicates that all State of New Hampshire terms and conditions are accepted by the responding vendor and that any and all other terms and conditions submitted by the responding vendor are null and void, even if such terms and conditions have terminology to the contrary. The responding vendor shall also be subject to State of New Hampshire terms and conditions as stated on the reverse of the purchase order.

#### CONTRACT TERMS AND CONDITIONS

- 1. The State of New Hampshire, acting through the Division of Plant and Property Management, engages the firm or individual ("the Vendor") to perform the services and/or sale of goods, described in the attached State documents, if any, and the Vendor's bid or quotation, both of which are incorporated herein by reference.
- 2. COMPLIANCE BY VENDOR WITH LAWS AND REGULATIONS. In connection with the performance of this agreement, the Vendor shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which shall impose any obligation or duty upon the Vendor, including, but not limited to civil rights and equal opportunity laws.
- **3. TERM.** The contract, and all obligations of the parties thereunder, shall become effective on a specified date and shall be completed in their entirety prior to a specified date. Any work undertaken by the Vendor prior to the effective date shall be at his sole risk and, in the event that the contract shall not become effective, the State shall be under no obligation to reimburse the Vendor for any such work.
- 4. CONTRACT PRICE. The contract price, a payment schedule and a maximum limitation of price shall be as specified by the bid invitation and the Vendor's bid. All payments shall be conditioned upon receipt, and approval by the State, of appropriate vouchers and upon satisfactory performance by the Vendor, as determined by the State. The payment by the State of the Contract Price shall constitute complete reimbursement to the Vendor for all expenses of any nature incurred by the Vendor in the performance by the Vendor and complete payment for the Services. The State shall have no other liability to the Vendor.
- **5. DELIVERY.** If the vendor fails to furnish items and/or services in accordance with all requirements, including delivery, the state may re-purchase similar items from any other source without competitive bidding, and the original vendor may be liable to the state for any excess costs.

If a vendor is unable to complete delivery by the date specified, he must contact the using agency. However, the agency is not required to accept a delay to the original delivery date. All deliveries are subject to inspection and receiving procedure rules as established by the State of New Hampshire. Deliveries are not considered accepted until compliance with these rules has been established. State personnel signatures on shipping documents shall signify only the receipt of shipments. All deliveries shall be FOB Destination.

6. INVOICING. All invoices must be in triplicate showing Order Number, Unit and Extension Prices and discounts allowed. A separate invoice shall be submitted for each order. Unless otherwise noted on the invitation to bid or purchase order, payment will not be due until thirty (30) days after all services have been completed, or all items have been delivered, inspected and accepted or the invoice has been received at the agency business office, whichever is later.

#### 7. PERSONNEL.

- **7.1.** The Vendor shall disclose in writing the names of all owners (5% or more), directors, officers, employees, agents or subcontractors who are also officials or employees of the State of New Hampshire. Any change in this information shall be reported in writing within fifteen (15) days of their occurrence.
- **7.2.** The person signing this agreement on behalf of the State, or his or her delegee ("Contracting Officer") shall be the State's representative for purposes of this agreement. In the event of any dispute concerning the interpretation of this agreement, the Contracting Officer's decision shall be final.

### 8. EVENT OF DEFAULT; REMEDIES.

- **8.1.** Any one or more of the following acts or omissions of the Vendor shall constitute an event of default hereunder ("Events of Default"):
- 8.1.1. failure to deliver the goods or services satisfactorily or on schedule; or
- 8.1.2. failure to submit any report required hereunder; or
- **8.1.3.** failure to perform any of the other covenants and conditions of this agreement.
- **8.2.** Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:
- **8.2.1.** give the Vendor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this agreement, effective two (2) days after giving the Vendor notice of termination; and

- **8.2.2.** give the Vendor a written notice specifying the Event of Default and suspending all payments to be made under this agreement and ordering that the portion of the Contract Price, which would otherwise accrue to the Vendor during the period from the date of such notice until such time as the State determines that the Vendor has cured the Event of Default, shall never be paid to the Vendor; and
- **8.2.3.** set off against any other obligation the State may owe to the Vendor any damages the State suffers by reason of any Event of Default; and
- **8.2.4.** treat the agreement as breached and pursue any of its remedies at law or in equity, or both
- 9. WAIVER OF BREACH. No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event, or any subsequent Event. No express failure of any Event of Default shall be deemed a waiver of any provision hereof. No such failure or waiver shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other default on the part of the Vendor.
- 10. VENDOR'S RELATION TO THE STATE. In the performance of this agreement the Vendor is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Vendor nor any of its officers, employees, agents or members shall have authority to bind the State nor are they entitled to any of the benefits, workmen's compensation or emoluments provided by the State to its employees.
- 11. ASSIGNMENT AND SUBCONTRACTS. The Vendor shall not assign, or otherwise transfer any interest in this agreement without the prior written consent of the State. No work required by this contract shall be subcontracted without the prior written consent of the State.
- 12. INDEMNIFICATION. The contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based on, resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Vendor. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant shall survive the termination of this agreement.
- **12.1 PATENT PROTECTION.** The seller agrees to indemnify and defend the State of New Hampshire from all claims and losses resulting from alleged and actual patent infringements and further agrees to hold the State of New Hampshire harmless from any liability arising under RSA 382-A:2-312(3). (Uniform Commercial Code).
- **13. TOXIC SUBSTANCES.** In compliance with RSA 277-A known as the Workers Right to Know Act, the vendor shall provide Material Safety Data Sheets with the delivery of any and all products covered by said law.
- **14. NOTICE.** Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given below.
- **15. AMENDMENT.** This agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto.
- 16. CONSTRUCTION OF AGREEMENT AND TERMS. This agreement shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns.
- 17. ADDITIONAL PROVISIONS. The additional provisions (if any) have been set forth as Exhibit "A" hereto.
- **18. ENTIRE AGREEMENT.** This agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire agreement and understanding between the parties, and supersedes all prior agreements and understandings relating hereto.

# BID INVITATION FOR: THERMOPLASTIC ROAD MARKING APPLICATOR

#### **PURPOSE:**

The purpose of this bid invitation is to establish a contract in the form of a purchase order for supplying the State of New Hampshire with a *THERMOPLASTIC ROAD MARKING APPLICATOR*, in accordance with the requirements of this bid invitation and any resulting order. These items shall be a one-time order with delivery required to the location indicated in the F.O.B. section of this bid invitation.

### **SPECIFICATION COMPLIANCE:**

Bidder's offer must meet or exceed the required specifications as written.

Note: Vendors must meet specifications as written. Any proposed changes to the specifications must be submitted in writing, to the Bureau of Purchase and Property (fax requests accepted) five (5) working days prior to the bid opening

#### **AGENCY ACCEPTANCE:**

Upon product delivery, the agency will accomplish a product inspection, to ensure that all specifications of this bid have been met. Upon product acceptance, the agency will acknowledge acceptance by submitting payment approval. The agency will submit any and all discrepancies to the bidder within **10 days** of receipt, and all discrepancies will be rectified prior to payment.

### **VENDOR ACCEPTANCE OF BID CONTENT:**

Bidder must carefully read and understand the information and documents contained in this RFB. The contents of the bid of the successful Vendor will become contractual obligations upon award of this contract. Failure of the successful Bidder to accept these obligations while participating in this contract will result in cancellation of the award.

Any questions regarding the content of this RFB must be resolved during the Inquiry Period and changed by Addenda. Otherwise, any proposal making exceptions to any of the terms and conditions of the RFB will be rejected.

Unless otherwise specified by the Bureau of Purchase and Property in this bid invitation document, all equipment offered by the bidder must be new; shall not be used, rebuilt, refurbished; shall not have been used as demonstration equipment and shall not have been placed anywhere for evaluation purposes.

#### **VENDOR CERTIFICATIONS**

All bidders must be duly registered as a vendor authorized to conduct business in the State of New Hampshire.

# STATE OF NEW HAMPSHIRE VENDOR APPLICATION.

Bidders must have a completed Vendor Application and W-9 Form on file with the NH Bureau of Purchase and Property. See the following website for information on obtaining and filing the required forms (no fee): http://www.admin.state.nh.us/purchasing

### **NEW HAMPSHIRE SECRETARY OF STATE REGISTRATION**

A person or persons conducting business under any name other than his/her own legal name must register with the NH Secretary of State. Businesses are classified as 'Domestic' (in-state) or 'Foreign' (out-of-state). Please visit the following website to find out more about the requirements and filing fees for both classifications: http://www.nh.gov/sos/corporate

### **WARRANTY REQUIREMENTS:**

Manufacturer's United States warranty shall apply for all items in this bid invitation. This warranty supersedes any prior or conflicting term or statement.

### **BID PRICES:**

Bid prices shall include delivery and all other costs. Bid prices should be government and/or educationally discounted prices.

REQUISITION NO.: 186000

#### **OFFER:**

Successful bidder hereby offers to sell the required items to the State of New Hampshire at the following price(s):

The unit prices and extensions indicated should be GSA, government and/or educationally discounted prices.

### **AWARD:**

THE AWARD WILL BE MADE IN TOTAL FOR PART A AND PART B COMBINED

OPTION #1: HOURLY RATE MUST BE SUBMITTED TO BE CONSIDERED

#### F.O.B.:

The F.O.B. shall be destination to the following delivery point:

NH DEPARTMENT OF TRANSPORTATION TRAFFIC BUREAU 220 SHEEP DAVIS ROAD CONCORD NH 03301

<u>Qty</u>	<u>Unit</u>	<u>Description</u>	<b>Delivered Price</b>
1	EACH	PART A  NEW, SKID MOUNTED THERMOPLASTIC UNIT THERMOPLASTIC EXTRUDER AS PER THE FOLD MINIMUM SPECIFICATIONS.	
Make	and model	Bidder to submit detailed manufactur	ers specifications/literature
DEL			•
	IVERY TII essful bidde:		A awarded within days after receipt of the order.
over to the ten d Birth			
			Delivered Price
<u>Qty</u>	<u>Unit</u>	<u>Description</u>	<b>Price Per PALLET</b> Extension
10	PALLE (40 -50# B		S LISTED
Succe	N JULY 23	hereby agrees to accomplish delivery of PART B ITEM, 2004 (NO BACKORDERS OR SPLIT SHIPME)	
OΡ	ΓΙΟN #:		
A ON MOU	IE YEAR S INTED THI	ERVICE AGREEMENT AFTER THE WARRANTY F	VICE VENDOR MUST BE ABLE TO RESPOND WITHIN
THE	SERVICE 1	ROVIDER SHALL SUBMIT AN HOURLY RATE PI	R THE FOLLOWING GUIDELINES.
	1. ALL	RATES WILL START WHEN PERSONNEL ARRIVES	AT THE ABOVE FOB DESTINATION LOCATION
	2. ALL	RATES WILL STOP WHEN PERSONNEL LEAVES TI	IE WORK SITE
		RATES ARE INCLUSIVE RATES THAT INCLUDE LANSPORTATION, LODGING AND MEALS.	BOR, MILEAGE, PARKING, TOLLS
		PERSONNEL SHALL BE REQUIRED TO BRING THE Γ ARRIVING AT THE WORK SITE	PROPER AND BASIC TOOLS APPLICABLE WHEN
		PERSONNEL SHALL OBTAIN ANY SUPPLIES NEED EDITIOUS AND COST EFFECTIVE MANNER.	ED TO COMPLETE THE JOB AT THE MOST
		J	HOURLY RATE \$

# **BID RESULTS:**

Bid results may be viewed on our web site at: http://admin.state.nh.us/purchasing/bids.asp. Bid results will be mailed to you if you include a self-addressed envelope with the correct amount of postage on it. Bid results will not be given by telephone

**SPECIFICATION:** Skid Mounted Thermoplastic Unit with Thermoplastic Extruder.

**GENERAL**: This specification is broken out into five (5) categories with A-D regarding the skid mounted thermoplastic unit:

- A. Premelter
- B. Hydraulic System
- C. Fuel system
- D. Additional Requirements
- E. Thermoplastic Applicator

The premelter, hydraulic system, and fuel system shall be mounted to the skid unit as shown on attached drawing, Appendix A. The skid unit fully loaded shall weigh less than 6000 pounds.

# A. PREMELTER: (See Appendix B for Drawing)

STYLE: Vertical, direct fired, vessel, box style insulation, unitized

construction. The heating kettle shall meet the requirements of the national fire underwriters, the national fire protection association and state and local authorities.

fire protection association and state and local authorities.

CAPACITY: Vessel shall contain 1,000 lbs of molten thermoplastic

HEATING: LP fuel, impinged jet style burners, 350,000 btu/hr rating

TEMPERATURE: Partlow analog style or robert-shaw temperature controls,

combination auto-ignition and pilot safety system

INDICATION: The vessel shall be equipped with bi-metal style

thermometers with 5" dial face in DEG F. TO READ

thermoplastic temperature.

AGITATION: The melter shall be equipped with a heavy duty blending

and agitation system. The drive system shall be direct drive with a hydraulic motor and respective reversing valve. The agitation drive system shall have a minimum

rating of 400 lbs/ft of torque.

MATERIAL

LOADING: Loading height shall not exceed 45 inches (see melter

drawing) each melter shall be equipped with a safety antisplash loading door for the thermoplastic. The loading door shall be constructed in such a way so as to facilitate loading an entire 50 lb bag of granular thermoplastic into a hopper style door. Upon closing the door the bag of thermoplastic shall be deposited into the melter without the possibility of splash back. The door shall be equipped with latching mechanism to prevent the door from accidentally

opening.

**DIMENSIONS:** 

Each single melter insulation exterior dimensions shall be 44"w x 47"d x 44" h. The heating exhaust stacks shall protrude approximately 18" above the top of the melter. Melter fee height shall not exceed 45" from the deck of the truck bed.

TRANSFER VALVE:

Melting vessel shall be equipped with a valve (New Mark "supervalve" or equivalent) at the lowest part of the tank to facilitate complete drainage of thermoplastic. The valve shall be a sliding gate type valve, and shall be capable of withstanding temperatures up to 700 deg.f. the valve shall be equipped with a remove operation handle so as to avoid operator contact with the valve. The valve shall be installed in the vessel in close proximity to the wall of the vessel, to facilitate sufficient heat transfer to the valve body, allowing proper flow of thermoplastic through the valve.

TROUGH:

The valve shall dispense thermoplastic into a channel style trough. The trough shall be hinged in close proximity to the valve and shall have sufficient length to safely transfer molten thermoplastic into a hand propelled applicator.

## B. HYDRAULIC SYSTEM:

SCOPE:

A hydraulic power supply shall be provided for the purpose of driving the hydraulic drive agitation motors, and the hydraulic hoist.

**HYDRAULICS:** 

The system shall contain a 3.5 gpm gear type pump, a suction strainer, a spin-on type return line filter, and a preset pressure relief valve.

CONFIGURATION:

The assembly shall be such that the vertical shaft engine sits on top of the reservoir and the pump is direct coupled to the engine drive shaft. For serviceability, the engine and pump assembly shall be removable from the tank, as a unit.

POWER:

13 hp vertical shaft Honda engine, properly converted to operate on propane fuel only. The engine shall be equipped with electric start.

RESERVOIR:

The reservoir shall have a 10 gallon capacity. The tank shall be equipped with a combination sight level/temperature gage, and a fill and drain port.

BATTERY:

Minimum 660 CCA automotive type with top terminals.

Battery shall be secured in an enclosure to protect it from

vibration, the weather, and theft.

# C. FUEL SYSTEM:

CAPACITY:

Two 100 lb lp fuel cylinders, with multi valve filler, to fill

tanks without disconnecting plumbing.

INSTALLATION:

Cylinders shall be installed vertically on the palletized unit along with melter and power pack. Cylinders shall be securely strapped to steel brackets in such a way so as to eliminate any chaffing of the cylinder from vibration.

Chain type attachment shall not be used.

PLUMBING:

Propane supply to the melter shall be rigid steel piping starting at the forward most portion of the deck. No flex lines shall be used within close proximity to the melter.

SAFETY:

Fueled pressure to the secondary regulator on the melter shall not exceed 15 psi. Separate ball type shut off valve for the melter and power supply engine shall be installed to

facilitate emergency shut off.

### D. ADDITIONAL REQUIREMENTS:

- 1) Safety equipment to be included with this thermo unit shall be heat resistant welder type gloves, heat resistant apron, face shield, and ABC rated fire extinguisher.
- 2) Successful bidder shall provide training on setup, maintenance, safety, and operation of the thermoplastic skid unit and applicator. All manuals shall also be supplied after training.
  - 3) The successful bidder must provide a one year warranty (parts & labor) and service on site within 24 hours during the hours of 7:00 am 4:00 pm.
- 4) A New Mark single 1000 lb melter with power pack assembly is indicative of type and quality or approved equal. Vendor shall submit photo and specification for all substitutions for approval with their bid.

## E. APPLICATOR: NM 2099 HANDLINER:

SCOPE: The thermoplastic applicator shall be capable of holding

and dispensing hot thermoplastic into screed type extrusion shaping dies. The resulting road marking shall be of various widths and thicknesses, based on current industry standards. The equipment shall be designed such that skilled operators can apply various lane and other straight lines, as well as symbols, arrows, and messages. The applicator shall conform to national fire underwriters, the national fire protection association and state and local

authorities.

MODEL: Newmark model nm 2099 hand propelled system for

additional specifications refer to newmark specification

bulletin d\$2099)

CAPACITY: 250 lbs Molten thermoplastic

WEIGHT: 259 lbs empty

DIMENSIONS: 42" w x 52"l x 37"h

APPLICATION: Four dies 4", 6", 8", & 12" widths included

GUIDANCE: Adjustable and retractable pointer

DURABILITY: Heavy duty formed and welded aluminum construction

shock absorbing tires front, wear resistant rear tires.

ADDITIONAL

INFORMATION: New Mark 2099 Thermoplastic Handliner is indicative type

and quality or approved equal. Vendor shall submit photo

and specifications for all substitutions for approval with

their bid.

# SUPPLEMENTAL SPECIFICATION

# Amend Section 632 to read:

- 2.5 Thermoplastic material shall be homogeneously composed of pigment, filler, resins and glass beads. The pre-mix glass beads shall be uniformly distributed throughout the entire thickness of material. The material, when applied in accordance with the manufacturer's recommended procedures, shall be capable of resisting deformation by traffic. The material shall be tested in accordance with AASHTO T250 requirements.
- 2.5.2 The binder shall be either alkyd or hydrocarbon conforming to AASHTO M249. If an alkyd thermoplastic is used, the binder shall consist of synthetic resins, at least one of which is solid at room temperature and high-boiling point plasticizers. At least 1/3 of the binder compositions shall be a maleic-modified glycerol ester resin and shall be at least 10% by weight of the total composition.
- 2.5.3 Thermoplastic material shall not deteriorate by contact with sodium chloride, calcium chloride or other chemicals used to prevent roadway ice. The material shall also not deteriorate because of the oil content of pavement materials or from oil droppings or other effects of traffic.
- 2.5.4 Material, when formed into pavement markings, shall be readily renewable by placing an overlay of the same material directly over the old markings. The new material shall bond itself to the old markings in such a manner that no splitting or separation takes place.
- 2.5.5 Preformed Thermoplastic material shall be composed of an resin resistant to degradation by motor fuels, lubricants etc. in conjunction with aggregates, pigments, binders, and glass beads which have been factory produced as a finished product. The thermoplastic material shall conform to AASHTO designation M249 with the exception of the relevant differences due to the material being supplied in a preformed state such as drying time and flowability tests.
- 2.5.5.1 Preformed thermoplastic material shall have factory applied surface beads in addition to the intermixed beads at a rate of 5 kilograms per 10 square meters (10 pounds per 100 square feet) of markings. It also shall contain a minimum of thirty percent (30%) intermixed graded glass beads by weight.
- 2.5.5.2 The surface, with properly applied and embedded surface beads, shall provide a minimum resistance value of 45 BPN when tested according to ASTM E 303.
  - 2.5.5.3 The material shall be applied at a thickness of 90 mils.